

Claims:

1. A wireless communication system serving at least one subscriber unit operating within a respective service area, the wireless communication system comprising:

a base station that provides wireless coverage within the service area, the base station establishing a forward link and a reverse link with the subscriber unit, communications transmitted to the subscriber unit on the forward link and communication received from the subscriber unit on the reverse link;

the base station and subscriber unit controlling a power level of transmissions on the reverse link in an attempt to cause the transmissions on the reverse link to arrive at the base station at desired power levels;

the subscriber unit incrementally altering the power level of transmissions on the reverse link by an adjustable power control step size, with the power control step size dynamically determined based upon system conditions.

2. The wireless communication system of claim 1, the wireless communication system operating according to a Code Division Multiple Access mechanism.

3. The wireless communication system of claim 1, wherein the subscriber unit is capable of supporting multiple power control step sizes.

4. The wireless communication system of claim 1, wherein the base station queries the subscriber unit regarding its capabilities to support multiple power control step sizes by exchanging messages with the subscriber unit.

1           5.     The wireless communication system of claim 1, wherein the system conditions  
2 include the power level and quality of the signal received by the base station from the subscriber  
3 unit.

1           6.     The wireless communication system of claim 1, wherein the system conditions  
2 include the type of service being provided to the subscriber unit.

1           7.     The wireless communication system of claim 1, wherein the system conditions  
2 include the mobility characteristics of the subscriber unit.

1           8.     The wireless communication system of claim 1, wherein communications  
2 received by the base station from the subscriber unit are over a high speed data link comprised of  
3 a plurality of reverse link code channels.

1           9.     The wireless communication system of claim 8, wherein the system conditions  
2 include the number of reverse link code channels received by the base station from the subscriber  
3 unit.

1           10.    The wireless communication system of claim 1, wherein the base station directs  
2 the subscriber unit to adjust the power control step size via a power control message.

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11. The wireless communication system of claim 1, wherein:

a plurality of subscriber units communicate with the base station via respective forward links and respective reverse links; and  
the base station dynamically directs each subscriber unit to adjust its respective reverse link power level based upon system conditions.

12. The wireless communication system of claim 11, wherein the system conditions

include the types of service being used by the subscriber units.

13. The wireless communication system of claim 11, wherein the system conditions

include the mobility characteristics of the subscriber units.

14. The wireless communication system of claim 11, wherein the system conditions

include the power level and quality of the signals received by the base station from the subscriber units.

15. The wireless communication system of claim 11, wherein system conditions

include the number of reverse link code channels received by the base station from the subscriber units.

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16. A subscriber unit for use with a wireless communication system comprised of at least one base station that provides wireless coverage to the subscriber unit within a service area, the subscriber unit comprising of:

a processing unit;

a radio transceiver unit coupled to the processing unit that communicates with the base station on both a forward link and reverse link, communications transmitted to the subscriber unit from the base station on the forward link and communications transmitted to the base station from the subscriber unit on the reverse link; the base station and subscriber unit controlling a power level of transmissions on the reverse link in an attempt to cause the transmissions on the reverse link to arrive at the base station at desired power levels; and

the subscriber unit incrementally altering the power level of transmissions on the reverse link by an adjustable power control step size, and the power control step size dynamically determined based upon system conditions.

17. The subscriber unit of claim 16, the wireless communication system operating according to a Code Division Multiple Access mechanism.

18. The subscriber unit of claim 16, wherein the system conditions include the power level and quality of the signal received by the base station from the subscriber unit.

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19. The subscriber unit of claim 16, wherein the system conditions include the type of service being provided to the subscriber unit.

1           20.    The subscriber unit of claim 16, wherein the system conditions include the  
2 mobility characteristics of the subscriber unit.

1           21.    The subscriber unit of claim 16, wherein communications received by the base  
2 station from the subscriber unit are over a high speed data link comprised of a plurality of reverse  
3 link code channels.

1           22.    The subscriber unit of claim 21, wherein the system conditions include the  
2 number of reverse link code channels comprising the high speed data link for communications  
3 received by the base station from the subscriber unit.

1           23.    The subscriber unit of claim 16, wherein the base station directs the subscriber  
2 unit to adjust the power control step size via a power control message.

1           24.    The subscriber unit of claim 16, wherein the base station may direct the subscriber  
2 unit to adjust the power control step size via general handoff direction messages, extended  
3 channel assignment messages and supplemental channel assignment messages.

1           25.    The wireless communication system of claim 11, wherein:  
2 the wireless communication system provides coverage to subscriber units over a plurality  
3 of service areas, each of the plurality of service areas served by at least one base station; and  
4 at least base station directs a subscriber unit to adjust its power control step size during  
5 handoff between the plurality of service areas.

1 26. The subscriber unit of claim 16, wherein the subscriber unit is directed by a base  
2 station to adjust its power control step size during handoff to another service area.

1 27. The subscriber unit of claim 16, wherein the subscriber unit autonomously adjusts  
2 its power control step size based on system conditions.

28. A method of operating a wireless communication system that serves at least one  
2 subscriber unit operating in a service area, the method comprising:  
3 establishing a forward link and a reverse link between a base station and a subscriber  
4 unit, communications transmitted to the subscriber unit from the base station on the forward link  
5 and transmitted to the base station from the subscriber unit on the reverse link;  
6 controlling a power level of transmissions on the reverse link to cause the transmissions  
7 on the reverse link to arrive at the base station at the desired power levels;  
8 incrementally altering the power level of transmissions on the reverse link by an  
9 adjustable power control step size, and  
10 the power control step size dynamically determined based upon system conditions.

1 29. The method of claim 28, further comprising:  
2 operating the wireless communication system according to a Code Division Multiple  
3 Access mechanism.



1           36.    The method of claim 28, further comprising:  
2           the base station communicating with a plurality of subscriber units via respective forward  
3   and reverse links; and  
4           the wireless communication system dynamically directing each subscriber unit to adjust  
5   its respective reverse link power level based upon system conditions.

1           37.    The method of claim 35, further comprising:  
2           the wireless communication system dynamically directing each subscriber unit to adjust  
3   its respective reverse link power level by individually determined power control step sizes based  
4   upon system conditions.

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